

PSYCHE.

IDENTIFICATION OF TWO OF FITCH'S SPECIES, VIZ., DELTOCEPHALUS MELSHEIMERII AND CHLOROTETTIX UNICOLOR.

BY C. P. GILLETTE, FORT COLLINS, COLO.

It was my good fortune the past summer to spend a few days in Albany, N. Y., and while there, was greatly favored by Dr. E. P. Felt, State Entomologist, who kindly allowed me to study the specimens in the box of Fitch types of Homoptera.

It will be remembered that in 1851 Dr. Fitch published a list of the Homoptera of New York State which he entitled a "Catalogue with references and descriptions of the insects collected and arranged for the State Cabinet of Natural History."

The insects upon which the paper was based were given printed numbers ranging between 609 and 874 inclusive, and were placed in the collection of the New York State Cabinet of Natural History in 1850. In 1879, as we are told in Dr. Lintner's Ninth Report as State Entomologist, p. 380, the collection was transferred to the office of the State Entomologist. The case containing the collection is kept hermetically sealed in a dark place and most of the specimens, except for the Aphididae and Typhlocybinae are still in a fair state

of preservation. Prior to 1879, museum pests destroyed a considerable number of specimens and the color markings of others have largely faded out.

A label upon the box in Dr. Lintner's hand reads as follows:

"HOMOPTERA

Arranged by Dr. Fitch in 1850: Transferred to this case in 1879. Contains 54 species and 5 subspecies of *types* of Dr. Fitch. See Fourth Report N. Y. State Cabinet N. H., pp. 43-69."

One of my chief objects in examining this collection was to determine whether or not Mr. *Baker is correct in overturning the opinions of other specialists as to the true *Deltocephalus melsheimerii* and *Chlorotettix unicolor* of Fitch, both of which were reported in "Hemiptera of Colorado" (Bulletin 31 of the Experiment Station).

Deltocephalus melsheimerii Fitch.— Although Dr. Fitch speaks of this species as "Common on grass," he described it from a single pair, the male

* Psyche, 1897, p. 118 and 1898, p. 219.

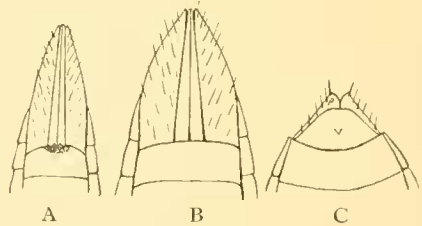
of which he numbered 805 and the female 806. The male has been lost but the female, with her original number, still remains and is intact, except for the loss of the tip of one wing cover. In color, it is bleached nearly white, so that the length,—.10 of an inch—given by Dr. Fitch, is all in the description that can now be applied to it.

Mr. Baker, in the first paper referred to above, speaks of having "the original Fitch type" before him and pronounces it the same as *D. minimus* of Osborn (He should have said Osborn and Ball) and proceeds to condone Prof. Osborn by saying "Still a good description of the genuine *melsheimerii* was much needed."

I had with me type specimens of *D. minimus* O&B and found by careful comparison that there could be no possibility of its being the same as Fitch's *melsheimerii*. Either the supposed type that Mr. Baker studied in the collection of the National Museum is unlike the type that Dr. Fitch placed in the State Cabinet, or Mr. Baker is not familiar with *minimus*. That *minimus* should occur at all in the collection made by Dr. Fitch is *very improbable* as so good a collector as Mr. Van Duzee has never taken it in N. Y. and Dr. Fitch reported *melsheimerii* "Common on grass." Farthermore, *minimus* seems to be distinctively a western species and probably does not occur east of the Mississippi.

The eastern specimens of *melsheimerii* average smaller in size and lighter in color than the western and the type specimen, number 806, does not exceed

a large specimen of *minimus* in length. It is readily separated from the latter species by its more robust form and by the entire hind margin of the last ventral segment of the female. In *minimus* the last ventral segment is moderately produced and has upon its hind margin two very distinct teeth as shown in the accompanying figure (A).



A, under surface of the abdomen of *Deltocephalus minimus*, showing the produced last ventral segment of the female with two distinct teeth; B, under surface of the abdomen of the female of *D. melsheimerii* showing the hind margin of the last ventral segment entire and not produced; C, under surface of the end of the abdomen in the male of *D. melsheimerii*; v, the large valve, p, short podical plates.

After a thorough study of the type, I went into a grass pasture in the suburbs of Albany and collected five females and four males of a species of *Deltocephalus* that I recognized at once to be like the type and they also proved to be identical with what Mr. Van Duzee had sent me years ago from N. Y. as *D. melsheimerii*. The differences in the genitalia of the males of these two species are even more striking than in the females.

The males of *minimus*, as well as the closely related species, *minkii*, *oculatus*, and *sylvestris*, have the valve relatively small and the plates long, so that the latter project beyond the valve a distance equal to once or twice the length of the valve. *Melsheimerii*, on the other hand, is readily separated from the preceding by its proportionately large valve and very short plates. The latter do not project beyond the valve to a distance more than one third or one half the length of the valve. See the accompanying figure (C).

I must conclude then that *Deltocephalus melsheimerii* is distinct from *D. minimus*; that the references to *D. melsheimerii* in "Hemiptera of Colorado" were correct; and that *D. affinis* G&B is a synonym of *D. melsheimerii*.

Chlorotettix unicolor Fitch.—This species was described from a single female, to which Dr. Fitch gave the number 767. The type is still in a good state

of preservation except that it is considerably faded in color.

Mr. Baker in his article on Chlorotettix referred to above reports upon an examination of what he supposes to be a Fitch type in the National Museum and says it is the species described by Mr. Van Duzee as *C. galbinata*. This being correct, the specimens reported in "Hemiptera of Colorado" as *C. unicolor* must be wrong. I compared the type of *unicolor* with *C. galbinata* Van D., and with the Colorado specimens of *C. unicolor* and found Mr. Van Duzee's determinations to be correct and his *galbinata* very distinct from the type of *unicolor*. The descriptions of both these species as given by Mr. Van Duzee in PSYCHE of August, 1892, pp. 308-311 are correct and will enable any one conversant with the gross anatomy of these insects to correctly separate the species without so much as a hand lens to aid him, unless his eyesight is very poor.

INSECTS AND SPIDERS OF THE GALAPAGOS ISLANDS.

BY VERNON L. KELLOGG, STANFORD UNIVERSITY, CAL.

By the financial aid of Mr. Timothy Hopkins of Menlo Park, California, Stanford University was enabled to send two zoologists with Captain Noyes of the ninety-six ton schooner Julia E. Whalen (San Francisco) to the Galapagos Islands in November, 1898. Mr. Robert Evans Snodgrass, assistant in entomology, and Mr. Edmund Heller,

student in zoology, were selected to make the trip. They reached the Archipelago on December 22, 1898, and remained in it until June 23, 1899. In the time of their stay they visited every island of the group except the small island called Jervis, spending from two to sixty days on each island. Some of the larger islands were visited